REMARKS

Applicants add new claims 10-19. Accordingly, claims 1-19 are all the claims pending in the application.

Claim rejections

Claims 1, 3 and 4 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Atsushi (JP Publication No.: 2002-221950; hereinafter "Atsushi") in view of Kitagawa et al. (U.S. Publication No.: 2002/0063784; hereinafter "Kitagawa").

Claim 2 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Atsushi and Kitagawa further in view of Lumelsky et al. (U.S. Patent No.: 5,196,924; hereinafter "Lumelsky").

Claim 5 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Atsushi in view Kitagawa further in view of Pether et al. (U.S. Patent No.: 6,801,925; hereinafter, "Pether").

Claims 7 and 8 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Atsushi and Kitagawa, in view of Lu et al. (U.S. Patent No.: 7,085,016; hereinafter "Lu").

Applicants traverse the rejection for at least the following reasons.

Claim 1

The Examiner asserts that Atsushi discloses a bit rate converter for converting an M-bit input video signal to an N-bit output video signal by retaining grayscale levels, wherein N is smaller that M in FIG. 1 and paragraphs (0068-0071). However, the Examiner concedes that Atsushi does not disclose a gamma correction memory as recited in claim 1, but contends that

Kitagawa discloses the features missing Atsushi. In support of this position, the Examiner states that:

> it would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify Atsushi to substitute the use of a gamma correction memory, for the memory (fig. 1(10)) of Atsushi, as taught by Kitagawa in order to perform gamma correction in order to properly show shadow detail in RBG images and to avoid gradation deterioration in gray zones (Paragraph [0005] of Kitagawa). in which a plurality of N-bit input grayscale levels are mapped to a plurality of K-bit output grayscale levels which are distributed on a non-linear curve corresponding to a non-linear curve on which grayscale levels of a display device are distributed, when said N-bit output video signal of said bit rate converter corresponds to one of the plurality of N-bit input grayscale levels.

Applicants respectfully disagree with the Examiner's assertion for at least the following reasons.

Atsushi is directed to a display device using color reduction to store data in a small memory. Atsushi discloses performing color reduction so that the tone number of each RGB component after color reduction is G component > R component > B component. This color reduction is unequally performed in a manner which reflects contributions of each RGB component to brightness (Abstract). Atsushi discloses a pseudo-gradation processing means 10 which receives the display data and performs a subtractive color by pseudo-gradation processing. The pseudo-gradation processing means 10 carries out the subtractive color on the R component to 4 bits, and G component to 5 bits and the B component to 3 bits. A frame memory 11 stores the subtractive color output from the pseudo-gradation processing means. Furthermore, Atsushi

discloses a gradation amendment means 12 that converts 12 bit data of the frame memory 11 to an 18 bit data to be used by the driving means 13 (paragraph [0071]-[0082]).

On the other hand, Kitagawa relates to a processing circuit carrying out gamma correction on a digital video signal for driving a display device exhibiting a non-linear optical response characteristic (paragraph [0001]). Kitagawa discloses a processing circuit capable of carrying out the correction at a signal level having a large gamma-correction-curve gradient with a high degree of precision without increasing the number bit output from a gamma correction LUT (paragraph [0008]). The processing circuit includes a gamma-correction unit for carrying out gamma correction on input signal using a gamma correction table, wherein the number of bits input to the gamma correction unit is set at a value greater than the number of bits output from the gamma correction unit.

Applicants submit that since Atsushi relates to performing color reduction on a received display data to reflect contribution of each RGB component to brightness and since Kitagawa relates to providing gamma correction unit in which the number of input data bits are larger than number of output bits, the cited references are directed to entirely different fields of endeavors. Therefore, it would not have been obvious to one of ordinary skill in the art to combine the references as asserted by the Examiner. That is, since Atsushi neither disclose not remotely suggest anything about gamma correction, one of ordinary skill in the art would not have been motivated to incorporate gamma correction process taught in Kitagawa. In fact, the Examiner is merely using impermissible hindsight reasoning to pick the gamma correction unit from

Kitagawa, without fully considering what each reference, as a whole, discloses to one of ordinarily skill in the art.

Moreover, Applicants submit that it would not have been obvious to substitute the use of a gamma correction memory for the memory (fig. 1, (11)) of Atsushi for at least the following reasons. The Examiner asserts that it would have been obvious to modify the teachings of Atsushi to perform gamma correction in order to properly show shadow detail in RBG images and to avoid gradation deterioration in gray zones. However, since Atsushi does not disclose nor remotely suggest anything about gamma correction, shadow detail or gradation deterioration in the gray zones, one of ordinary skill in the art would not have been motivated to substitute the gamma correction memory for the frame memory 11 (fig. 1). That is, there is no reason why one of ordinary skill in the art would replace a memory that is needed to store the color reduced display data bits with a gamma correction memory when gamma correction or gradation deterioration in the gray zones is not even considered to be a problem in Atsushi. In fact, replacing the frame memory will deviate from the primary function and intended use of the memory being used to store the color-reduced display data.

Furthermore, Atsushi discloses that the color reduction is performed in an unequal manner based on the contributions of each RBG components to brightness. As such, the color reduced display data having the RBG components in a particular unequal relationship could produce an unexpected result, when applied to the gamma correction memory and could possibly render a product resultant from this combination inoperable.

In view of the above, Applicants submit that claim 1 is allowable over the cited reference.

Claim 3 and 4

Applicants submit that claims 3 and 4 depend from claim 1, and therefore these claims are allowable at least by virtue of their dependency.

Claim 2

Applicant submit that since Lumelsky does not cure the deficiency noted above with regard to claim 1, and since claim 2 depends from claim 1, claim 2 is allowable at least by virtue of their dependency.

Further, since Kitagawa specifically discloses that the value of the input bits are greater than the value of the output form the gamma correction unit, this teaches away from K is equal to N. Thus, Kitagawa clearly teaches away from the alleged teachings of Lumelsky and the claimed invention.

Claim 5

Applicant submit that since Pether does not cure the deficiency noted above with regard to claim 1, and since claim 5 depends from claim 1, claim 5 is allowable at least by virtue of their dependency.

Claims 7 and 8

Applicant submit that since Lu does not cure the deficiency noted above with regard to claim 1, and since claims 7 and 8 depend from claim 1, claims 7 and 8 are allowable at least by virtue of their dependency.

New claims

Applicants submit that claims 10-16, 18 and 19 depend from claim 1, and therefore are allowable at least by virtue of their dependency on claim 1. Also, claim 17 recites subject matter analogous to claim 1, and therefore is allowable over the cited reference for at least the similar reasons claim 1 is allowable. Furthermore, the cited references do not disclose "a first component processor for processing a first component of an RGB color model, a second component processor for processing a second component of the RGB color model and a third component processor for processing a third component of the RGB color model."

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

Ebenesar Thomas

Ebenesar D. Thomas
Registration No. 62,499

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE
23373
CUSTOMER NUMBER

Date: September 18, 2008